



The following will help maintain good oral health:

- Brush and floss regularly
- Use a fluoridated toothpaste to strengthen teeth against developing decay
- Your dental practitioner may recommend using mouth washes
- You may have a “dry mouth” as a side effect of some medications used to treat kidney disease. This makes it easier for decay and gum disease to develop. To increase saliva and lubricate the mouth, take frequent sips of water, chew sugarless gum or suck on sugarless lollies.
- Regular dental check-ups can detect and treat decay and gum disease before they become serious.
- If you wear a full or partial denture, it should be carefully cleaned using a toothbrush or denture cleaning brush, morning and night. Dentures should be removed from the mouth at night and stored in a dry, safe location to prevent development of sore spots or ulcers.

Kidney disease and dental treatment

If you have had dialysis and intend to visit a dental practitioner for treatment following the dialysis, it is important to:

- Provide your dental practitioner with a list of all your medications
- Seek advice from a medical practitioner - it's recommended that people with kidney disease take antibiotics before receiving dental treatment because they are at increased risk of infections due to the presence of the shunt used for dialysis (the shunt is a tube that is surgically attached to a blood vessel in the arm or leg of a patient with kidney disease which is connected to the dialysis machine during the dialysis process)
- Tell your dental practitioner or whoever is taking your blood pressure where your shunt is located and be sure that they place the blood pressure cuff on an arm or leg that does not contain the shunt.

Kidney disease, especially when it progresses into ESKD, is associated with many oral health complications, including increased risk of gum disease, dental decay, tooth loss, and inflammation of the salivary glands. Therefore, it is important to maintain a consistent oral health routine, including regular dental visits.

If you are concerned about your kidney health, or if you have signs or symptoms of kidney disease, you should seek advice from your healthcare provider.

End-Stage Kidney Disease and Oral Health

Information for Patients

Special Topic No. 24

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Kidneys are a pair of bean-shaped organs located on each side of your spine, just below your ribcage and behind your stomach (Figure 1). Kidneys filter wastes and excess fluids from blood to make urine and help keep chemicals (such as sodium, potassium, and calcium) balanced in the body.

The kidneys also make hormones that help control blood pressure, stimulate bone marrow to make red blood cells and keep your bones strong and healthy. When kidneys lose their filtering abilities, harmful levels of fluid and wastes can accumulate in your body.

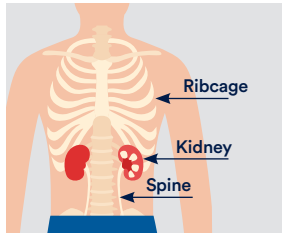


Figure 1: Location of the kidneys

What is End-Stage Kidney Disease?

End-stage kidney disease (ESKD), also known as end-stage renal disease or kidney failure, occurs when your kidneys lose their function and reach an advanced state. In end-stage renal disease, kidneys no longer work, as they should, to meet your body's needs. End-stage kidney disease can be managed by dialysis, kidney transplantation or with conservative care. Managing your symptoms and ensuring the best quality of life during the remainder of your life are the aims of conservative care. People with kidney disease in general have weakened immune systems, and therefore they are more susceptible to infections.

What are the symptoms of ESKD?

- Loss of appetite, nausea, vomiting
- Fatigue and weakness
- Headaches
- Urinating less frequently
- Chest pain, if fluid builds up around the lining of the heart
- Shortness of breath, if fluid builds up in the lungs
- Water retention in hands, face and legs causing swelling
- High blood pressure (hypertension)
- Difficulty sleeping
- Decreased mental sharpness
- Muscle twitches and cramps
- Accumulation of toxic products in blood can cause persistent itching all over the body
 - Feeling cold
 - Restless legs
 - Metallic taste

How can we diagnose ESKD?

The following tests can confirm the presence of kidney disease:

- Urine test: This test helps your doctor check for protein and blood in your urine. These substances indicate that your kidneys are not processing waste properly.
- Serum creatinine test: This blood test helps your doctor check whether creatinine is building up in your blood. Creatinine is a waste product that your kidneys should filter out of your body.
- Blood urea nitrogen test: This test helps your doctor check how much nitrogen is in your blood. Nitrogen is a waste product that your kidneys should filter out of your body.
- Estimated Glomerular filtration test: This test allows your doctor to estimate how well your kidneys filter waste.

What is the effect of ESKD on oral health and vice versa?

Bacteria that cause dental decay and gum disease can get into your bloodstream, especially if your immune system is weak. People with weakened immune systems are at an increased risk of developing infections as a direct result of these bacteria. Once bacteria are in your blood, they are transported throughout your body, allowing them to cause some of the other damage associated with gum disease, like kidney damage. The bacteria from your mouth add to the burden of the failing kidneys, especially if you have ESKD, and this increases your risk of having a fatal blood infection (septicaemia). On the other hand, ESKD instigates changes in oral health due to hormonal and immunological changes in the body. Patients with ESKD can experience changes in teeth, oral mucosa, bone and other structures supporting teeth, salivary glands, and the tongue, creating a vicious cycle, where oral health and kidney health are closely related to each other (Figure 2). For example, infections from gum disease or advanced tooth decay can prevent someone from being eligible for a kidney transplant or delay the transplant until their dental work is completed.



Figure 2: Kidney health and oral health go hand in hand

How does ESKD present in your mouth?

- Dry mouth
- Bleeding gums (Figure 3)
- Dental decay
- Loose teeth
- Bad breath (ammonia-like bad odour)
- Coated tongue (Figure 4)
- Ulcers
- Loss of taste or metallic taste
- Gum overgrowth/hyperplasia (Figure 5)



Figure 3. Bleeding gums

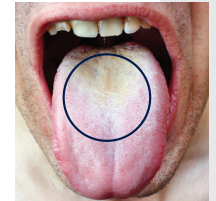


Figure 4. Coated tongue (circled)



Figure 5. Gum overgrowth

Oral health care for patients diagnosed with ESKD

- Visit your dental practitioner to schedule dental check-ups at least twice a year or as recommended by your dental practitioner.
- Brush your teeth twice a day using a toothbrush with soft bristles and a fluoride toothpaste
- Use non-alcoholic based mouthwashes, as recommended by your dental practitioner
- Clean between your teeth using floss and/or interdental brushes
- Drink plenty of water

Preventing dental disease

To avoid any serious dental issues, preventing and treating dental diseases is vital. Preventing infections is also important when you are on a waitlist for kidney transplant, as an existing infection can stop you from going ahead with a transplant. Good oral hygiene will remove bacteria that causes decay and gum disease.